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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/750,342	12/29/2000	Sung-Il Park	3430-0165P	6907

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EXAMINER

DUONG, THOI V

ART UNIT PAPER NUMBER

2871

DATE MAILED: 09/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/750,342

Applicant(s)

PARK ET AL.

Examiner

Thoi V Duong

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 5, 7, 8, 10, 12 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Zhang (USPN 5,995,189).

As shown in Fig. 1, Zhang discloses a liquid crystal display LCD) device comprising:

upper and lower substrates with a liquid crystal layer interposed therebetween (col. 6, lines 44-50);

a sealant 107 between the upper and lower substrates;

a plurality of source and gate pads on the lower substrate;

a plurality of gate and data lines 106, 105 on the lower substrate 101, each gate line being electrically connected with the corresponding gate pad, each data line being electrically connected with the corresponding source pad; a gate insulating layer (206 in Fig. 2A) between the gate lines and the data lines; a source PCB 103 electrically connected with the plurality of source pads; a gate PCB 104 electrically connected with the plurality of gate pads; and a plurality of transmitting wires 109 on the lower substrate, the transmitting wires being electrically connected with the gate and source pads across the sealant such that the source PCB is electrically connected with the gate

Art Unit: 2871

PCB through an external terminal 108 (col. 6, lines 51-60), wherein the gate transmitting wires 106 include at least eight electrical wires, and

a plurality of switching devices 112.

As shown in Figs. 1, 4 and 6, the device of Zhang further comprises a repair wire 304 in region R1 crossing with each gate transmitting wire with a gate insulating layer 220 interposed between the repair wire and the gate transmitting wire, wherein the repair wire is positioned in a region defined by the sealant 107, and wherein the repair wire is positioned across the sealant 107.

Also, as shown in Figs. 1, 4 and 6, the device of Zhang further comprises first and second repair wire 304, the first repair wire in region R1 crossing with each of the source pads with a gate insulating layer 220 interposed therebetween, the second repair wire in region R2 crossing with each of the gate pads with the gate insulating layer interposed therebetween.

Finally, as shown in Figs. 1 and 3-6, the device of Zhang further comprises first and second dummy patterns 301, 302, 303, which are positioned on the lower substrate along regions R1, R2 which are along the edges of the upper substrate, each dummy pattern having at least the same height as the gate transmitting wire (col. 7, lines 63-67), and auxiliary dummy patterns 304 formed over the first and second dummy patterns.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2871

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang (USPN 5,995,189) in view of Noritake et al. (USPN 6,400,438 B1).

As shown in Figs. 1-6, Zhang discloses a method of fabricating a liquid crystal display device, the method comprising:

preparing first and second substrates;

forming a plurality of gate lines 106, gate pads, and dummy patterns (col. 6, lines 63-67 and col. 7, lines 1-6) on the first substrate 201;

forming a gate insulating layer 206 on the gate lines, gate pads, and dummy patterns;

forming a plurality of data lines 105, data pads, and gate transmitting wires 109 on the gate insulating layer;

forming a passivation layer 220 on the data lines, the data pads, and the gate transmitting wires;

forming a sealant 107 on the first substrate (col. 11, lines 49-59);

attaching the first and second substrates and forming a liquid crystal layer between the first and second substrates (col. 11, lines 60-67).

Zhang discloses a method of fabricating a liquid crystal display device that is basically the same as that recited in claim 14 except for scribing and breaking the second substrate. Referring to Fig. 5(a), Noritake discloses that insulator substrates 12a-12d are cut away by means of scribing and breaking a mother glass board 31 along

Art Unit: 2871

the dotted line in Fig. 5(a) wherein the edges of the contact portions 22 of an opposite electrode 17 (Fig. 6) do not extend beyond or to the borders of the substrates 12a-12d and each separated substrate 12 is used to fabricate a LCD as shown in Fig. 6 (col. 3, lines 62-67 and col. 4, lines 1-8). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of fabricating a LCD device of Zhang with the teaching of Noritake by scribing and breaking the second substrate so as to create separated liquid crystal panels without contaminants and hence improve reliability of the display.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang in view of Kuwashiro (USPN 5,945,984).

Zhang discloses a LCD device that is basically the same as that recited in claim 4 except for a plurality of dummy pads between the adjacent gate pads and between the adjacent source pads. As shown in Fig. 3, Kuwashiro discloses a LCD device in which dummy pads 731-1, 731-2 are disposed between data pads 721 for inspecting and repairing the display. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the LCD device of Zhang with the teaching of Kuwashiro by forming a plurality of dummy pads between the adjacent gate pads and between the adjacent source pads so as to easily perform an inspection and repair the display.

Allowable Subject Matter

6. Claims 6, 9 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

In addition to other elements as shown, none of the prior art of record suggests or discloses alone or in combination that the LCD device further comprises:

a repair wire with a specific resistance of 10 micro-ohm/cm including first and second closed roofs, the first closed roof being formed along first edge of the upper substrate, the second closed roof being formed along second edge of the upper substrate.

The most relevant reference, USPN 5,995,189 of Zhang, fails to disclose or suggest that repair wire with closed roofs formed along the first and second edges of the upper substrate. The Zhang's reference only discloses a repair wiring pattern without closed roofs formed across the sealant on the lower substrate.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Art Unit: 2871

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (703) 308-3171. The examiner can normally be reached on Monday-Friday from 8:00 am to 4:30 pm.

Thoi Duong

9/12/2002



William L. Sikes
Supervisory Patent Examiner
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